

What is claimed is:

1. A vehicle air-conditioning system, comprising:

a case defining a first air inlet and a second air inlet,
wherein

the first air inlet permits cool air to enter said case and
said second air inlet permits hot air to enter said case, and

said second air inlet is disposed above said first air
inlet;

a foot opening disposed at a location downstream of said
first air inlet and said second air inlet;

a face opening disposed at a location downstream of said
first air inlet and said second air inlet, said face opening
disposed above said foot opening;

a blow mode-changing door, wherein said door is a butterfly
door for opening and closing said foot opening and said face
opening; and

a door-housing portion for pivotably housing said blow
mode-changing door, wherein

in a bi-level mode in which said blow mode changing door
opens both said foot opening and said face opening, a bi-level
mode bypass passageway for introducing cool air from said first
air inlet into said face opening is defined between an extremity
of said blow mode-changing door and an inner wall surface of said
door-housing portion.

2. The vehicle air conditioning system according to claim
1, further comprising:

a sealing rib provided on the inner wall surface of said door-housing portion, wherein

said blow mode-changing door sealingly abuts against said sealing ribs, thereby simultaneously blocking both said foot opening and said face opening.

3. The vehicle air conditioning system according to claim 1, wherein

said door-housing portion is formed of a cylindrical portion parallel to an axial direction of said blow mode-changing door,

an expanded portion expanded radially outward is formed on part of a circumferential surface of said cylindrical portion , and

said bi-level mode bypass passageway is formed inside said expanded portion.

4. The vehicle air conditioning system according to claim 2, wherein

said door-housing portion is formed of a cylindrical portion parallel to an axial direction of said blow mode-changing door,

an expanded portion expanded radially outward is formed on part of a circumferential surface of said cylindrical portion , and

said bi-level mode bypass passageway is formed inside said expanded portion.

5. The vehicle air conditioning system according to claim 3, wherein

said cylindrical portion is disposed so as to extend in a transverse direction of the vehicle, with said expanded portion and said face opening being disposed at a central portion of the cylindrical portion in the transverse direction of the vehicle, and

said foot opening is disposed at either side of said cylindrical portion in the transverse direction of the vehicle.

6. The vehicle air conditioning system according to claim 1, wherein

said door-housing portion is disposed so as to extend in the transverse direction of the vehicle,

said foot opening is disposed at either side of said cylindrical portion in the transverse direction of the vehicle,

a width of said cool air inlet in the transverse direction of the vehicle is less than a width of said hot air inlet in the transverse direction of the vehicle, and

said bi-level mode bypass passageway is located at a position corresponding to said cool air inlet in said door-housing portion in the transverse direction of the vehicle.

7. The vehicle air conditioning system according to claim 2, wherein

said door-housing portion is disposed so as to extend in

the transverse direction of the vehicle,

said foot opening is disposed at either side of said cylindrical portion in the transverse direction of the vehicle,

a width of said cool air inlet in the transverse direction of the vehicle is less than a width of said hot air inlet in the transverse direction of the vehicle, and

said bi-level mode bypass passageway is located at a position corresponding to said cool air inlet in said door-housing portion in the transverse direction of the vehicle.

8. The vehicle air conditioning system according to claim 1, further comprising:

an air conditioning case through which air to be blown toward front seats in a passenger compartment flows,

a heating heat exchanger, disposed within said air conditioning case, for heating air, and

a rear seat cool air bypass passageway disposed below said heating heat exchanger within said air conditioning case, wherein

said cool air inlet is a rear seat cool air inlet into which cool air is introduced from said rear seat cool air bypass passageway,

said hot air inlet is a rear seat hot air inlet into which hot air having passed through said heating heat exchanger is introduced,

said foot opening is a rear seat foot opening for blowing air toward a feet of a rear seat passenger, and

said face opening is a rear seat face opening for blowing

air toward an upper body of a rear seat passenger.

9. The vehicle air conditioning system according to claim 6, further comprising:

an air conditioning case through which air to be blown toward front seats in a passenger compartment flows,

a heating heat exchanger, disposed within said air conditioning case, for heating air, and

a rear seat cool air bypass passageway disposed below said heating heat exchanger within said air conditioning case, wherein

said cool air inlet is a rear seat cool air inlet into which cool air is introduced from said rear seat cool air bypass passageway,

said hot air inlet is a rear seat hot air inlet into which hot air having passed through said heating heat exchanger is introduced,

said foot opening is a rear seat foot opening for blowing air toward a feet of a rear seat passenger, and

said face opening is a rear seat face opening for blowing air toward an upper body of a rear seat passenger.

10. The vehicle air conditioning system according to claim 7, further comprising:

an air conditioning case through which air to be blown toward front seats in a passenger compartment flows,

a heating heat exchanger, disposed within said air conditioning case, for heating air, and

a rear seat cool air bypass passageway disposed below said heating heat exchanger within said air conditioning case, wherein

said cool air inlet is a rear seat cool air inlet into which cool air is introduced from said rear seat cool air bypass passageway,

said hot air inlet is a rear seat hot air inlet into which hot air having passed through said heating heat exchanger is introduced,

said foot opening is a rear seat foot opening for blowing air toward a feet of a rear seat passenger, and

said face opening is a rear seat face opening for blowing air toward an upper body of a rear seat passenger.

11. An apparatus comprising:

a case defining a first air inlet and a second air inlet, wherein said second air inlet is disposed adjacent to said first air inlet;

a foot opening disposed lower than said first air inlet and said second air inlet;

a face opening disposed higher than said first air inlet and said second air inlet;

a blow mode-changing door, wherein said door is a butterfly door for opening and closing said foot opening and said face opening;

a door housing portion for pivotally housing said blow mode changing door, wherein said blow mode changing door (39) opens both said foot opening and said face opening;

a bi-level mode bypass passageway defined by an inner wall surface of said door housing portion and an extremity of said blow mode changing door, wherein said bi-level mode passageway permits cool air from said first air inlet into said face opening; and

an expanded portion expanded radially outward is formed on part of a circumferential surface of said door housing portion, wherein

said bi-level mode bypass passageway is formed inside said expanded portion.